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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,129

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Lutz Heidrich

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EXAMINER

PAPE, ZACHARY

ART UNIT

PAPER NUMBER

2835

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,129	Applicant(s) HEIDRICH, LUTZ	
	Examiner ZACHARY M. PAPE	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/4/2005; 5/6/2005</u> | 6) <input checked="" type="checkbox"/> Other: <u>JP2002-215269</u> |

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement filed on 5/6/2005 has been only partially considered and is attached hereto.

Regarding the references which were not considered, the Examiner was unable to consider them since they were not supplied by the Applicant.

The Information Disclosure Statement filed on 11/4/2005 has been fully considered and is attached hereto.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. **Therefore, the internal combustion engine, the alternating current machine, the spacing sleeve, and the voltage tap of claim 1, and the further unit of claim 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 11 recites, "at least one of said heat sinks.. is arranged via at least one spacing sleeve on the rectifier housing" which is confusing. The Examiner notes [0008] which provides support for having a spacing sleeve, however the written description fails to supply details surrounding the spacer ring (I.E. where it is arranged, etc.). Additionally the Examiner notes that the drawing fail to detail the spacer ring as well.

Claim 11 further recites, "the spacing sleeve is in the form of a voltage tap" which is confusing since the written description and the drawings fail to supply details surrounding the spacer ring (as per above) and the voltage tap.

Claim 18 recites, "at least two diodes in each case" which is unclear.

Claim 19 recites, "together with a further unit" however, only [0013] recites the "further unit" but with no detail as to what the further unit is.

For the purposes of examination, the spacing sleeve will be considered as per below, however the voltage tap, the "in each case", and the further unit limitations will not be considered.

Claims 12-21 are (also) rejected for at least the reasons that they depend from claim 11.

Claim Objections

4. Claims 11, 14, and 17 are objected to because of the following informalities:

Claim 11 recites, "rectifier which" which is incorrect. It appears it should be changed to read, "a rectifier which".

Claim 14 recites, "the heat sink" which lacks antecedent basis since there are multiple heat sinks disclosed in parent claim 1.

Claim 17 recites, "at least one of the heat sink" which is incorrect. It appears it should be changed to read, "at least one of the heat sinks".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11, 15, and 17 are, as best can be understood by the Examiner, rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al. (US 6,150,196 – hereinafter, “Tanaka”).

With respect to claim 11, Tanaka teaches (In Figs 3, 9, and 11) an electrical supply apparatus for an internal combustion engine which has a DC voltage network and an alternating current machine (Generally 1, 4 as in Fig 11) arranged externally on the internal combustion engine said apparatus comprising: a rectifier (43) which electrically connects the DC voltage network and the alternating current machine (Inherent in a rectifier for an alternator as taught by Tanaka); wherein, the rectifier has at least two heat sinks (30, 31), which each have at least one associated diode (32, 33) and are in the form of a negative pole or positive pole (Col 4, Lines 8-12) at least one of said heat sinks is arranged physically separate from the alternating current machine (See Figs 9 and 11, wherein Fig 9 shows that the rectifier (43) is separate from any part of the alternating current machine); the at least one of said heat sinks has an associated fan (Col 1, Lines 51-53, also see Fig 11 which teaches air intakes and exhaust holes which suggests that, as is well known in the art, a fan is attached to the alternating

current machine), and is arranged via at least one spacing sleeve (35a) on a rectifier housing (35) which is formed from plastic (Col 4, Lines 2—21).

With respect to claim 15, Tanaka further teaches (In Figs 9 and 11) that the rectifier housing (35) is arranged in a flow direction of cooling air in the vicinity of a cooler fan (wherein the rectifier is between the air intake (13a) and the exhaust (13b) and is therefore in a flow direction); at least one first face (adjacent the tip of the arrow for element number 35 as in Fig 3) of the housing (35) associated with the cooler fan is open; and a second, opposite face (semi-circular part adjacent the tip of the arrow for element number 35 in Fig 6) of the housing has at least two ventilation openings for cooling air.

With respect to claim 17, Tanaka further teaches (In Fig 3) that at least one of the heat sink s (30, 31) has at least two cooling ribs (31b) that are connected to one another or are attached to a rectifier housing of the rectifier on at least one side; and the cooling ribs are open vertically downwards.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14, as best can be understood by the Examiner, is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Bowling et al. (US 6,227,782 – hereinafter, “Bowling”).

With respect to claim 14, Tanaka teaches all the limitations of claim 11 and further teaches that at least one of said heat sinks (30, 31) is connected to the rectifier housing (35) via a fastener (29) but fails to teach that the fastener is a plastic screw. Bowling teaches using a plastic screw as a fastener (Col 3, Lines 39-46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bowling with that of Tanaka to provide a fastener which has a tensile memory such that the fastener can be reused (Col 3, Lines 39-46).

Claim 16, as best can be understood by the Examiner, is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Kitahara et al. (JP 2002-215269 – hereinafter, “Kitahara”).

With respect to claim 16, Tanaka teaches all the limitations of claim 11 as per above and further teaches (In Figs 9 and 11) that cables (3a, 3) are located between the rectifier (43) and the alternating current machine (Generally 1, 4 as per Fig 11) but is silent as to the remaining limitations of claim 16. Kitahara teaches the conventionality of having a cable duct for cables which is at least partially in the form of an electromagnetic screen (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kitahara with

that of Tanaka to prevent unnecessary electromagnetic waves from the cable
(Abstract).

**Claim 18, as best can be understood by the Examiner, is rejected under 35
U.S.C. 103(a) as being unpatentable over Tanaka.**

With respect to claim 18, Tanaka teaches all the limitations of claim 11 as per above but is silent as to the working range of the rectifier as well as the number of diodes and the connection therein. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the rectifier of Tanaka to have a power between 2.5kW and 3.6 kW since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. In the present case, one would design both the alternator and the rectifier so that they can supply the appropriate and correct type of voltage to the devices which require it. Regarding the number of diodes, the rectifier will contain the appropriate number of diodes such as to be able to have a power between 2.5kW and 3.6kW. Additionally, a rectifier as disclosed by Tanaka will inherently have at least two diodes connected in parallel.

Examiner's Note

7. Claims which have no art rejection are only rejected under 112 1st paragraph as per above.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,821,674; US 6,784,576; US 4,321,664; US 7,166,944; US 5,258,673; US 2004/0012274 all further teach rectifiers with or without alternators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZACHARY M. PAPE whose telephone number is (571)272-2201. The examiner can normally be reached on Mon. - Thur. (7:00am - 5:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Z. M. P./
Examiner, Art Unit 2835

/Jayprakash N Gandhi/
Supervisory Patent Examiner, Art Unit 2835